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Fig. 1 shows the ground plan and elevation of risers, the pitch lines and development of tangents for face mould; the upper and lower pitch being the same, only one face mould is required. The mould is simply reversed in application, as shown by Figs. 2 and 3.

Further explanation would be unnecessary here. Careful study of the plate, and occasional reference to last year's plates in the AMERICAN BUILDER, is all that is necessary to enable the student to thoroughly understand it.

(To be Continued.)

[In compliance with a request made by a number of our subscribers, we have transferred these valuable articles to the WOOD-WORKER, in which paper the series will be continued until completed.—ED.]

### Correspondence.

We invite communications from our readers in matters connected with the trades we represent. Be brief, courteous, and to the point.

#### *Editor of Wood-Worker:*

I AM very much pleased with the WOOD-WORKER, and so are all my friends that have seen it; the last number was particularly good and rich. The papers on Carpentry and Handrailing are very valuable to me, and I suppose to others as well.

I would like to say a word to "Newark" and a "Subscriber from Mississippi" concerning their guess cutting. We have plenty of guess wood-butchers in Wisconsin, and a sorry lot they are. The trades would have a much better reputation if all guess mitre-cutters were respectably interred.

Some of these wood-mutilators in this neighborhood never served a day at a trade, and are as ignorant of the use of mechanics' tools as a Fejee Islander is of the planetary motions; but they have brass and impudence enough to persuade people that they, the "guess men," are master mechanics; and these men will often undertake to do work, on the shortest notice, that experienced mechanics will hesitate about before taking in hand; but we are told on good authority that :

"fools rush in  
Where angels fear to tread."

It is quite evident that such men work for gain altogether, and have no pride in the trade or desire to become skilled, only so far as it may tend to fill their pockets; but there is something wrong when men without tools and without training are permitted to compete with skilled mechanics who have spent hundreds of dollars in tools and time in acquiring the skill they possess; in fact, it is a question whether it is worth while to learn a

trade or not, as it appears to me that the unskilled stands a better chance of making a living than the man who fritters away his best days in learning a trade the public refuse to appreciate.

APPRENTICE.

HAMMOND, Wis., March 17, 1879.

#### *Editor of the Illustrated Wood-Worker:*

YOUR elegant little paper has just come to hand, and I am delighted with it. The designs of furniture shown in the February and March numbers are excellent. I intend making a sideboard from the design shown on Plate 19, which I think is a very scholarly piece of work. The wardrobe shown on Plate 24 is a perfect gem of simplicity and appropriateness, and when I get time I will put Mr. Fieder's idea of a wardrobe into tangible shape.

I herewith tender my thanks to the gentleman named for the design, as I am the person who asked for it under the name of

NED.

WACO, Texas, March 12, 1879.

[For want of space we are obliged to hold over a number of interesting communications.—ED.]

### Intercommunication.

This department is intended to furnish, for the benefit of all our readers, practical information regarding the art of manipulating wood by hand or machinery; and we trust that every reader of our paper will make the fullest use of it, both in asking and answering. All persons possessing additional or more correct information than that which is given relating to the queries published are cordially invited to forward it to us for publication. All questions will be numbered, and in replying it will be absolutely necessary, in order to secure due insertion, that the NUMBER and TITLE of the question answered should be given; and in sending questions, the title of key-words of the question should be placed at the head of the paper. Correspondents should in all cases send their addresses, not necessarily for publication, but for future reference. We also request that all questions or answers be written on separate slips of paper, and addressed to the Editor. Notes of practical interest will be welcome at all times. When drawings are sent to illustrate answers to questions, or for full pages, they should be on separate slips, and should be drawn in ink on clean, white paper. Short questions, requiring short answers, may be asked and answered through the agency of postal cards.

When answers to questions are wanted by mail, the querist must send a stamp for return postage.

### Queries.

18. MIRROR.—Can any of your readers acquaint me with some method whereby I can recoat a mirror that has had a portion of the silvering taken off? Information on this subject will be appreciated by—JOHN HEALT.

19. BENCH.—I would like very much if some reader would send you, for illustration in the WOOD-WORKER, a design for a handy and complete joiner's work-bench. I would like it fitted up with head and tail-screws.—GOUGE.

20. RAILING.—Would some of your clever readers be kind enough to publish a design for a wooden railing to go round a grave? I

live in a country town, and have frequently been employed to erect railings or palisades around graves in the cemetery, but I have met with great difficulty in getting appropriate designs.—**UNDERTAKER.**

21. **EOLIAN HARP.**—I have heard of these instruments, and that they can be made easily. Will you or some of your readers explain how they are made, and how used, and oblige?—**MUSICAL.**

A SUBSCRIBER, writing from Columbus, Ohio, asks us rather a curious question, and one that cannot be answered in these pages; but if he will send us his full name and address, we think we shall be able to furnish him with the information desired. In the meantime we may say, that if he takes the rim of a plug hat for the shape he wishes to get, he will have done what the best workmen do in such cases as he speaks of.

22. **HAND-RAILING.**—Will any kind reader that knows inform me which is the best and simplest work on hand-railing for an apprentice to study? I am anxious to learn some good system of building rails, but I am told by old mechanics that there is a variety of opinions regarding which is the best. It would be a serious loss to me to study a system and then be obliged to abandon it afterwards. Trusting that some of your readers may think this matter worthy of their consideration, I subscribe myself—**BALUSTER.**

23. **SCALE.**—On one side of the tongue of all first-class steel squares there is space running down the centre which contains a scale commencing with the figures 10, 20, 30, and so on up to 60, the divisions being about two and one-eighth inches apart. These divisions are again subdivided into tenth parts of the greater divisions. Can any of your readers explain the use of this scale, or how it can be practically applied? I have never yet met any one who could explain the mysterious figures mentioned above, and a full explanation of them and their uses would greatly oblige—**STEEL SQUARE.**

24. **CIRCULAR SAW.**—There is a method of arranging a six or eight-inch circular saw in its mandril so that it will plough or cut a groove from  $\frac{1}{8}$  to  $\frac{3}{4}$  of an inch in width, and from  $\frac{1}{4}$  to 1 inch in depth; and if any of your readers that see this query, and who understand the method, will be kind enough to describe it through your ANSWER column, they will confer a favor on an appreciative **MECHANIC.**

25. **SPRING AND PLUMB BEVEL.**—I think I quite understand the “Sectorian system of Hand-railing” thus far, with the exception of the spring and plumb bevel. I am some-

what at a loss to find out the way the bevel should be placed in the sector.

I wish some one would give a diagram of the sector closed to some angle showing the bevels in position. I am sure such an illustration will please others as well as an APPRENTICE.

27. **AREA.**—Will some reader of the ILLUSTRATED WOOD-WORKER inform me how I can find the contents of the cross section of a cylindrical ring?—**MENSURATION.**

28. **OIL.**—Please inform me what kind of oil is the most economical to use for lubricating wood-working machinery?—**PANEL.**

29. **WAGES.**—If some of your readers in California would send you a statement for publication of the wages paid to carpenters and cabinet-makers in that State, they would render a kindness to a half dozen of your readers.—**EMIGRANT.**

#### Answers.

WE wish it distinctly understood, that we do not hold ourselves responsible for the accuracy or reliability of answers furnished to this department by our correspondents.

We cordially invite our readers to take an active part in this department, as we are confident that much good can be accomplished by a free interchange of ideas and opinions in regard to subjects connected with the art of wood-working.

Many persons are afraid to write to a public journal because of their lack of literary attainments; to such we would say: Give us your ideas in such language as you can command, and leave the rest to us. It is ideas and opinions we want, such as may be of use to the workingman.

9. **MOULDING CUTTERS.**—Ogee is mistaken. A dark straw color would leave moulding cutters a shade too hard; they would be liable to break and could not be filed. A bluish red will leave the cutters plenty hard enough, and they will be less liable to fracture.—**TRANSOM.**

3. **FILLING.**—A. P. G. can make a good filling by using the following: Take equal parts of linseed oil and Japan dryer, and mix with wheaten flour until it can be felt under the hand; then apply to the wood and let stand a while, after which rub off with a cloth, taking care that it does dry enough to become sticky. When the surplus preparation is removed, and the work is thoroughly dry, it should be rubbed down with very fine sand-paper, after which the work is ready to receive either polish or varnish. I have practised this method of filling for many years and in every case it has given the best satisfaction.—**E. A. W.**

13. **MOULDINGS.**—I will try and explain to “Puzzled” how circular mouldings can be “stuck” on a single-head moulding machine. In the first place, where the segmental sash or door-heads are parallel, a bed, with one edge formed concave to suit the convex side of the sash or door-head, must be made of  $1\frac{1}{2}$  or 2 inch plank, the other edge being left square, so that it can rest fair on the table of

the machine. Take off all pressure rollers but the one next to the cutters, and also take off all pressure springs behind the head; then adjust your bed so as to allow the cutters to operate on the stuff to be wrought. It will be seen that, as the stuff is slid along in the concave bed, the edge will always be the same distance from the centre of the mandril which permits the cutters to act on the stuff without cutting too deep. It requires two persons to operate the machine in sticking stuff of this kind; one to feed and the other to hold the stuff close in to the cutters. It is also necessary to cut the segments, so that when the face side is against the face of the machine the grain of the stuff will always be in such a position that the cutters will act on it without tearing it up. A little practice will enable "Puzzled" to work out his segments without much difficulty.

To stick a moulding on a sash or door-head, where the face-edge is concave, and the back edge a tangent or a straight line, "Puzzled" must proceed as follows: First, find radius of circle of which the head required is a segment; then describe the head on a piece of stuff prepared the right width; then join a piece of stuff temporarily on to the straight edge of the head. This being done, describe another curve from the same centre, but with a greater radius on this second piece, which is called a "rocker." This "rocker" should have a couple of spurs on its straight edge to hold the heads to be "stuck" in their right positions. When the "rocker" is made, then make a bed or "cradle," the same as for sticking heads that are parallel, as described above. The head to be stuck, and the "rocker," when in operation, will together form a parallel, having its inner or sash edge concave, and its outer or sliding edge convex. The bed forms the third piece, and will always remain stationary on the table of the machine, when once set, until the whole lot of heads are stuck, when it and the "rocker" can be laid aside to be used again when similar heads are to be "stuck."

The stuff for the head will, of course, require to be cut so that the grain will always be in the right position for cutting when placed in the machine.

If this description is not sufficiently clear, I will forward drawings to the ILLUSTRATED WOOD-WORKER which will show how the trick is done, in a clear manner.—STICKING-BOARD.

3. FILLING.—If A. P. G. will use the following as a filling, he will find it work well and give good satisfaction: One quart of boiled linseed oil; one quart of spirits of turpentine, and the same quantity of Japan dryer, then mix with it  $1\frac{1}{2}$  pounds of corn-

starch. Apply to the work with a good stiff brush; when nearly dry, but not sticky, rub off with a clean cloth, after which let stand until it is hard dry, then rub down and varnish or polish as may be required.—JOHN HEALT.

### Useful Items for Office and Shop.

CEMENT OF A MAHOGANY COLOR.—Take 2 oz. of beeswax and  $\frac{1}{2}$  oz. of resin, melt them together; then add  $\frac{1}{2}$  oz. Indian red, and a small quantity of yellow ochre, to bring the whole to a desired color. Preserve in a pipkin for use.

GLUE.—Melt your glue in small quantities. Newly-made glue holds much stronger than that which has been remelted. Apply the glue as hot as the nature of the work will admit, heating the pieces to be joined, if this can be done without injury.

TURNING GRINDSTONES.—The best thing to turn up a grindstone with is a piece of gas pipe used as a turning tool, using a piece of iron clamped to the face of the grindstone trough so as to form a rest or support for the gas pipe. The stone should be turned when dry and the face bevelled off after it is true with a piece of thin sheet iron.

PRESERVING WOOD.—Blythe's idea of preserving wood with creosote-saturated steam has been very successfully carried out. The process is very simple and efficient. The apparatus consists of a high-pressure steam boiler; another boiler containing the creosote, with a vat filled with creosote, to supply it by means of a pump; sheet-iron cylinders where the pieces of timber are injected, and a system of tubing connecting the boilers and the cylinders. The steam opens the pores of the wood, and the creosote is left deposited in the cells. When the wood comes out it is very pliable, and can be bent into any desired shape; but it soon hardens and becomes very rigid. Wood thus treated very effectually resists the deteriorating influence of moisture and of various insects and worms.

### CHEAP DRAWINGS.

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